

ROCKS and MINERALS

42
Official Journal
of the
Rocks and Minerals
Association



A Magazine for
Mineralogists,
Geologists and
Collectors

BUY WAR BONDS

Liberty



Freedom

May it Ring Soon!

JANUARY, 1945 - 46

25c

21
Vol. 20, No. 1

Whole No. 162

Preform Cabochons

From the choicest of rough gem materials, shaped in perfect ovals, round, and square stones. When you buy PREFORM cabochon blanks you are assured of getting genuine stones free from cracks or imperfections ready for you to finish.

CHRYSOCOLLA either in clear blue or mixed with Malachite 75c and \$1.00 each.
TURQUOISE. Choice stones at 75c, \$1.00, smaller ones at 50 each.

VARISCITE. America's finest green gem. Some contain yellow and gray matrix markings, others clear green 50c, 75c, \$1 each.

RUSSIAN LAPIS. The world's best colored Lapis. Choice blanks \$1.00, deep indigo blue \$1.50, deep blue with gold pyrites \$1.50 to \$2.50 each.

CHILEAN LAPIS. Blue mottled with white 50c, for almost all blue 75c each.

SARDONYX, Brazil. Red and white, beautiful bandings 35c and 50c each.

CARNELIAN, Brazil. Red-brown banded agate 35c and 50c each.

TIGER EYE, African. Cut from choice gem stock, yellow, mixed yellow with blue-green 50c and 75c each.

RUTILATED QUARTZ, Brazil. Clear rock crystal with rutile needles 50c, 75, \$1 ea.

MALACHITE, Siberian or African. Compact contrastingly banded 50c, 75c each.

MOSS AGATE, Oregon, red or green, showy 35c each.

SHATTUCKITE, Arizona. Variegated blue and red 35c, 50c each.

RHODOCHROSITE, Argentina, in clear rose red or red-white contrasting bands 75c ea.

AMAZONITE. Bright verdigris-green 35c ea.

ROYAL RHODONITE, Calif., rich red colored choice blanks 35c each.

SPECIAL AMATEUR'S ASSORTMENT—10 preform cabochons, not identified, \$3.00

NECK CHAINS—Sterling Silver 18" and 20" lengths 50c, \$1.00, \$1.50 each

NECK CHAINS—Gold Filled 18" long \$1.50 each

NECK CHAINS—10 Kt. Gold 18" long \$6.00 each

BROOCH MOUNTINGS—Yellow Gold Filled

Round, fancy edging 3/4-in. \$1.25, 1-in. \$1.50, 1 1/4-in. \$2, 1 1/2-in. \$3.00.

Oval, fancy edging—1 1/4-in. to 1 3/8-in. \$2.00, 1 1/2-in. \$3.00.

CHARMS—round, plain style, 3/4-in. 75c, 7/8-in. \$1.00.

CHARMS—round, fancy edging 1-in. \$1.25 and \$2.00.

***EAR WIRES**—screw type, sterling silver 35c each, \$3.75 doz.

***CLEAVES OR BAILS**—for hearts or pendants sterling silver or gold gilled 25c each, \$2.50 per dozen.

***SCREW EYES**—for hearts or pendants sterling silver or gold filled 2 for 25c, \$1.25 per doz.

***SWIVELS**—small or medium, sterling silver 35c each.

***JUMP RINGS**—sterling silver or gold filled, oval or round in six sizes 20c to 50c per dozen.

***HOLLOW TUBES**—sterling silver, #17 used in attaching bails 25c ea., \$2.50 doz.

***CHAIN**—sterling silver or gold filled, light, medium or heavy, sold in any length 40c to \$2.65 ft.

On all orders add extra for postage and insurance, also 20% to cover Federal Luxury Tax. Residents of California should add the 2 1/2% California State Sales Tax.

*Last seven items are not subject to the Federal Luxury Tax.

Write for free copies of our special bulletins on lapidary supplies, books, gem materials, and fluorescent minerals.

Business Hours: Monday thru Saturday—1:30 to 5:30 P.M. Closed Sunday.

WARNER & GRIEGER

405 Ninita Parkway
Pasadena 4, California

Our Phone Number is Sycamore 6-6423

Science Lib
Direct

ROCKS and MINERALS

PUBLISHED
MONTHLY



Edited and Published by
PETER ZODAC

January
1945

Contents for January, 1945

CHIPS FROM THE QUARRY	2
BIG FIRE AT MAMMOTH, ARIZONA	2
SUMMARY OF CHALLENGER EXPEDITION BOTTOM SAM- PLES. <i>By K. O. Emery</i>	3
WAVELLITE IN THE RORER MINE, VIRGINIA. <i>By R. J. Holden</i>	6
SOME MINERALS OF THE GALAPAGOS ISLANDS. <i>By Pvt. Gab- riel Dziadik</i>	7
ZIRCONS FROM ABRAKI PAHAR, INDIA	9
DIAMOND HEAD, HAWAIIAN ISLANDS. <i>By John S. Albansese</i>	10
VIRGINIA MINERAL PRODUCTION BREAKS RECORDS	11
ERROR IN TIEMAN'S AD	12
JADE MOUNTAIN, ALASKA	12
MY EASTERN VACATION. <i>By B. M. Brehm</i>	13
SOME NEVADA PICKINGS. <i>By Augustus Reeves</i>	16
GEM QUALITY SPHALERITE FOUND IN MEXICO	17
GRIOTTE MARBLE OF FRANCE	17
VICTORY SYMBOL CUT FROM FOSSILIZED ROCK. <i>By Louis P. Ueck</i>	18
MT. APO, HIGHEST FOUND IN THE PHILIPPINES	18
FINEST PYRITES FOUND IN ITALY	18
BIBLIOGRAPHICAL NOTES	18
CLUB AND SOCIETY NOTES:	
NEW YORK MINERALOGICAL CLUB	19
LOS ANGELES MINERALOGICAL SOCIETY	20
THE SOUTHWEST MINERALOGISTS	20
LOS ANGELES LAPIDARY SOCIETY	21
MARQUETTE GEOLOGISTS ASSOCIATION	21
CANON CITY GEOLOGY CLUB	21
STATE MINERAL SOCIETY OF TEXAS	21
WITH OUR DEALERS	22
INDEX TO ADVERTISERS	48

Entered as second-class matter September 13, 1926, at the Post Office at Peekskill, N. Y.,
under the Act of March 3, 1879
Copyright 1945 by Peter Zodac Title registered in U. S. Patent Office

specialty written articles (as contributions) are desired.

Subscription price \$2.00 a year; Current numbers, 25c a copy. No responsibility is
assumed for subscriptions paid to agents and it is best to remit direct to the Publisher.
Issued on the 1st day of each month.

*Authors alone are responsible for statements made
and opinions expressed in their respective articles.*

ROCKS and MINERALS

PEEKSKILL, N. Y., U. S. A.

The official Journal of the Rocks and Minerals Association

CHIPS FROM THE QUARRY

TWO SPECIAL ARTICLES IN THIS ISSUE

We wish to call our readers' attention to two special articles in this issue: "Some minerals of the Galapagos Islands", by Pvt. Gabriel Dziadik, of the U.S. Army, and "Diamond Head, Hawaiian Islands", by John S. Albanese, of the U.S. Marines. In addition to these two interesting articles we also

received a number of interesting minerals from the localities.

We would gratefully appreciate it if members of the R. & M. A., who may be stationed in distant lands—and especially in areas little known for minerals—if they, too, would send us notes on minerals seen, and if possible, a few minerals as well.

ATTENTION MEMBERS IN THE PACIFIC!

We are anxious to obtain a little information on some mineral localities of the following islands:

Fiji: Copper and gold mines exist in the islands and especially on Viti Levu Island.

Solomon: A gold mine exists on Guadalcanal; magnetite sand occurs on Bougainville.

Guam: Thomsonite pebbles and magnetite sand occur on the island.

Tabiti: Alancite has been found on one of the islands.

If any of our members have visited one or more of the above localities or who may have the opportunity to do so, we would be most grateful if they would write us giving their observations on minerals found, location of localities, etc. Of course we would appreciate information on other localities.

BIG FIRE AT MAMMOTH, ARIZONA

Mammoth, Arizona, the locality famous for many rare and beautiful minerals, has had a very bad fire recently and chances are strong that the mine may shut down permanently. If the mine should shut down, then no more minerals may come out of it again and thus specimens from this noted locality may become very scarce. A R. & M. A. member residing in southern Arizona sends us the following report on the fire:

"While repairs were being made in the Mohawk shaft at Mammoth (we old timers have not adopted the word 'Tiger' of recent origin) on Labor Day, a fire started at or close to the bottom

of the Mohawk shaft. This being an up-cast shaft at this season of the year the fire went to the top cleaning out the shaft and spreading to the machine shop, coarse-crushing plant, and some other structures clustered around the old Mohawk. I don't know whether the property has been closed permanently or not. Below the 900 there are still large known reserves as well as unprospected ground. However, I think it is a matter of pencil and paper to determine whether rehabilitation costs exceed profit and some calculation on the time element. Last I knew it had not been settled definitely."

Vol.

In
tion
desir
distr
sedim
was i
the c
of so
const
studi
distr
Chall
expec
furth
ocean
large
colle
lantic
20 o

1. M
P
E

T
R
D
G
V
C
B
G
V

ROCKS and MINERALS

PUBLISHED
MONTHLY



Edited and Published by
PETER ZODAC

January
1945

Vol. 20, No. 1

((The Official Journal
of the
ROCKS AND MINERALS
ASSOCIATION))

Whole No. 162

SUMMARY OF CHALLENGER EXPEDITION BOTTOM SAMPLES

By K. O. EMERY

La Jolla, Calif.

Introduction

In making a study of the rate of deposition of deep sea sediments, it was found desirable to have a summary of the depth distribution of the various types of oceanic sediments. Since no suitable compilation was found, the accompanying diagram of the depth distribution of sediments and of some common authigenic minerals was constructed. In order to have uniformly studied sediments having a world wide distribution, only data obtained by the Challenger Expedition¹ were used. This expedition was made by the British to further the knowledge of marine life, ocean currents, and bottom materials. A large number of bottom samples were collected from various depths in the Atlantic, Pacific, and Indian Oceans. About 20 of the Challenger samples were re-

studied by the writer with results very similar to the original examination made about 1885. In order to show clearly the depth distribution, data from the synoptical tables were abstracted and plotted graphically. The graphs are presented herewith in the expectation that they may present certain data more lucidly than the tables.

It should be noted that the Challenger samples do not represent a truly random selection of locations, nor is the number of samples of each type of sediment truly comparable to the percentage area of the ocean covered by that type of sediment. A comparison of the number of samples and the areal distribution of each type of sediment is shown in Table 1.

Depth and Type of Sediment

As shown by Figure 1, red clay, a fine grained oxidized sediment, appears to be restricted to depths greater than 2100

1. Murray, J., and Renard, A. F. (1891) Report on the deep sea deposits: *Challenger Expedition*.

Table 1

Type of sediment	Number of Samples	% No. of Samples	Area of Sediment (million sq. mi.)	% Area
Red clay	76	15.7	51.5	35.9
Diatom and Radiolarian ooze....	14	3.0	13.1	9.2
Globigerina and Pteropod ooze	144	29.8	49.9	34.8
Volcanic mud and sand.....	56	11.5	0.6	0.4
Coral mud and sand.....	34	7.0	2.6	1.8
Blue mud	71	14.7	14.5	10.1
Green mud	35	7.2	0.8	0.6
Various terrestrial sediments	54	11.1	10.1	7.2
	484	100.0	143.1	100.0

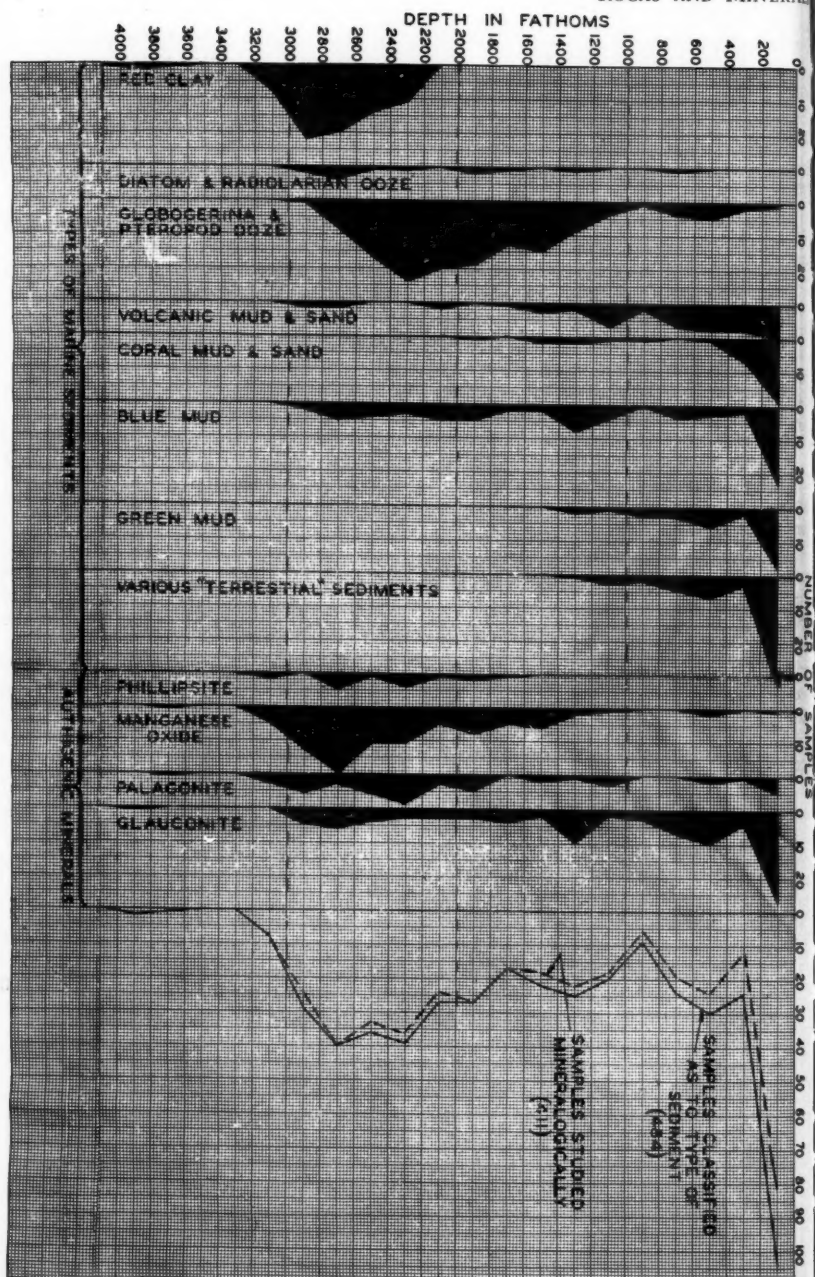


FIGURE 1

Depth distribution of sediments and of authigenic minerals. Note that the graphs are based on the number of samples found in successive 200 fathom units of depth.

fathoms. Globigerina and pteropod oozes, both largely composed of the shells of calcareous organisms, overlap the red clay considerably, being found as deep as 3000 fathoms but are also present in depths of only 100 fathoms. Though less abundantly sampled, the diatom and radiolarian oozes, both composed largely of the shells of siliceous organisms, have about the same depth distribution as the calcareous oozes. Volcanic mud and sand and blue muds have a range similar to the oozes but are much more abundant in shallow water. Green muds, coral mud and sand, and various so called "terrestrial" sediments are more restricted in range and are more abundant in shallow water.

Depth of Authigenic Minerals

The depth distribution of authigenic minerals, or minerals which are formed on the sea floor, is also shown in Figure 1. Glauconite is found over a wide range of depths but corresponds roughly with the depth distribution of blue and green muds. Manganese oxide is present chiefly in water deeper than 1200 fathoms. Phillipsite is also found chiefly only in very deep water because of its greater frequency in the deep red clays and siliceous oozes. Palagonite has a wide depth range.

Minerals in Marine Sediments

Figure 2 shows the percentage of all samples of each type of sediment containing a given mineral in the > 0.05 millimeter size fraction. Quartz is found in most of the blue and green muds and in the "terrestrial" sediments. It is practically absent in volcanic mud and sand, probably because the marine volcanics are generally basic in nature. Feldspar is very abundant in all sediments except the volcanics. As expected, mica is more abundant in blue and green muds as well as in various "terrestrials". Its presence in deeper sediments may be due to the ease with which it can be transported. Various acid heavy minerals have a distribution similar to quartz, though they are not so abundant. On the other hand, the basic heavy minerals, magnetite, augite, and olivine are most widely distributed in volcanic muds and sands, with hornblende more common in sediments found nearer shore.

Fragments of the dominantly continental clastic, crystalline, and metamorphic rocks were reported only in blue muds and in various "terrestrials", though they are sometimes encountered in deeper sediments where their presence is usually attributed to ice rafting. Volcanic rocks

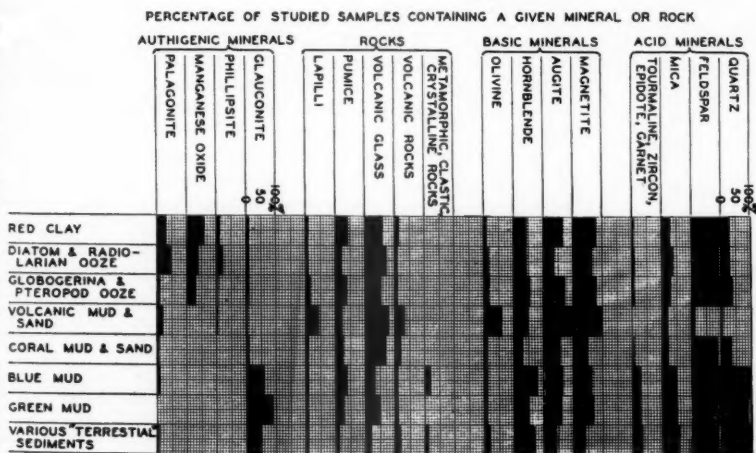


FIGURE 2

Minerals of marine sediments. The height of the graph indicates the percentage of the samples which contain at least a trace of the given mineral.

and lapilli are, of course, more frequent in volcanic muds and sands. In contrast, glassy volcanics and pumice are found in all types of sediment and particularly in the deep clays and oozes. The distribution of the latter was thought by Murray and Renard to be due to the ease of rafting of pumice through flotation.

An interesting distribution was found for authigenic minerals. Glauconite, while reported in all types of sediment, is by far more commonly encountered in green and blue muds and in the "terrestrial"

sediments. Phillipsite, a sodium zeolite, is more frequent in red clays and siliceous oozes. Manganese oxide is more abundant in red clay but is common also in the various oozes. Palagonite, an alteration product of volcanic glass, is most abundant in red clay and in diatom and radiolarian ooze, probably because of the slowness of deposition of these sediments. It is next most abundant in volcanic sediments because these sediments contain more glass than others.

WAVELLITE IN THE RORER MINE, VIRGINIA

R. J. HOLDEN

A couple decades ago there were many blast furnaces operating in Virginia on limonite ore. One furnace in Roanoke used in part the ore from the Rorer mine, located a short distance south of the city.¹ The limonite in this mine occurs in the form of lumps, nodules and granules disseminated in clay, which overlay the Valley Limestone and was derived by weathering from that formation. These limonites were too high in phosphorus for making Bessemer pig iron but were satisfactory for foundry irons and were occasionally used for basic pig iron. The phosphorus content of the ores ran from something like 0.3 to 1.0 percent. So far as I know no one had ever identified the phosphorus mineral.

One day the chemist at the Roanoke furnace, working on the Rorer mine ore, had a brainstorm. When reproached by the furnace superintendent for his failure to turn in the phosphorus on the previous day's mine run, he was very much embarrassed. Under urging he admitted that his phosphorus results on this day's run were so high that he could not believe them. Subsequently this high phosphorus percentage was

confirmed. When this matter was presented to the mine superintendent, it was decided to abandon the portion of the mine from which this ore came. So far as I know, this part of the mine has never again been operated. At the time of my first visit to the mine after this incident, this wild tale was related to me. I located masses of a white mineral in radiating aggregates. The mystery was solved. The mineral was wavellite. As I remember it now after a lapse of many years, there were wavellite lumps up to six inches in diameter.

Since this is a characteristic occurrence of wavellite, it is not surprising that it should occur in the Rorer mine. Subsequently, examination of limonite ores from mines somewhat similarly located showed small white fibers on the surface of the limonite. It is not improbable that these were wavellite and that part of the phosphorus in others of these ores was due to the same mineral. However, not all phosphorus in Virginia limonite is in the form of the mineral wavellite.

¹Mineral Resources of Virginia—James-town Exposition Commission, 1906, pg. 446.

For Assurance of Victory Buy War Bonds

SOME MINERALS OF THE GALAPAGOS ISLANDS

By PVT. GABRIEL DZIADIK

U. S. Army

Some few months ago I was stationed in the Galapagos Islands and while there had occasion to visit a number of the islands in the group. Unfortunately I am not a mineral collector and know almost nothing about minerals and as the chief rock of the islands is a dark, unattractive basalt, there was nothing spectacular to attract my attention. Just a few weeks before I left the islands, the Editor of *Rocks and Minerals*, learning I was there, (I am from Peekskill and know him well), wrote me requesting a few samples from the Galapagos. Not knowing one mineral from another but following his instructions "that clean unweathered material be sent," I managed to fill a cigar box with "odd stones," hoping that one at least would prove of some interest. These specimens were collected on two islands only—Santa Cruz (the second largest island in the group), and Seymour (a small island about 2 miles northeast of Santa Cruz Island).

His acknowledgment was received in almost no time at all and to my amazement, the Editor wrote that every specimen was of unusual interest and everyone was different, too. He identified each specimen so completely that I could in turn identify the duplicates retained by me.

This first course in mineralogy got me so intensely interested I was going to do some collecting and send him a number of "real" specimens, but before I could get started I was transferred back to the states.

Description of the Islands

The Galapagos are a group (archipelago) of small volcanic islands in the Pacific Ocean, crossed by the equator, and extending from about 89° to 92° W. Long. They are about 650 miles due west of Ecuador to which country they belong.

The islands were discovered early in the 16th century by the Spaniards who

named them Galapagos Islands ("Tortoise Islands") after the huge tortoises which are still found on them. Many of the individual islands bear English names that were given them by English pirates who had so frequently visited them in the days when buccaneers roamed the seas. There are six or seven principal islands, eight or ten smaller, and hundreds of islets, some being mere rocks. The total area of the islands is 2,868 sq. miles; normal population about 500.

The chief islands, with their Spanish names, are: Albemarle (Isabela), Indefatigable (Santa Cruz), James (San Salvador), Narborough (Fernandina), Charles (Santa Maria), Chatham (San Cristobal), Hood (Espanola), Barrington (Santa Fe), Duncan (Pinzon), Tower (Genovesa), Bindloe (Marchena); and Abington (Pinta).

Most of the islands are roughly circular in shape, but Albemarle, the largest, is very irregular in shape. This island is 75 miles long and averages about 18 miles in width. As the area of this island is about one-half the total area of the entire group, the other islands by comparison are very small.

The islands were annexed by Ecuador in 1832 who has used them chiefly as a penal colony. In 1835, Charles Darwin¹ explored the islands to whom much credit is given for our first real description of them.

Since my specimens were collected on Santa Cruz (the Spanish name is more popular than Indefatigable) and Seymour Islands, I will base my observations chiefly on them, believing that what was found here will also be found on the other islands.

Santa Cruz Island

Santa Cruz Island is roughly circular in shape and about 25 miles in diameter. The eastern half of the island is completely tropical—the western half is a desert—a mountain ridge extending

north and south divides the two regions. In the southern part of the island is its highest mountain, about 3,300 feet high, which is also an active volcano. In the early part of 1943, the volcano erupted for about three days. The specimens collected by me were picked up along the northwest shore of the island.

Seymour Island.

This is a small island, about 7 miles long (north and south), and about 4 miles wide (east and west). It lies about 2 miles off the northeast shore of Santa Cruz. Since this island is much smaller, more easy to traverse, and the opportunity to examine it coincided with the Editor's request, my observations on it were more complete than of any other island in the group.

Seymour Island is practically all basalt, but the highest elevation is only about 400 feet above sea level, in the north, tapering to almost 0 in the south. A big deposit of gypsum occurs on the west coast of the island and south of the harbor. The gypsum is white and reddish in color, about 150 feet high, and about 400 feet long. Nice shell fossils occur in this gypsum.

The east shore of the island is all rock, the west shore is rocky with some nice sandy beaches. The sand is chiefly shell sand, but much olivine sand is also present. In one instance the olivine sand covered an area approximately 10x10 feet in size and 3 inches deep. Both these sands have been examined by Harry C. Grahl, of New York City, who specializes in sands, and his report is as follows: "The white variety is composed of about 90% shell sand, soluble in dilute hydrochloric acid, 9% olivine, and 1% quartz. The black variety seems to be composed of about 90% olivine with 10% shell sand. Under a low magnification the black grains (olivine) become dark green and brown and are translucent."

Geology

The islands are of volcanic origin and very mountainous, the highest mountain, an active volcano, 4,700 feet high, is in the southwestern part of

Albemarle Island. The chief rock is basalt but there are much lava flows, volcanic tuff, and scoria present. Limestones and sandstones, as loose boulders, were found by me on Seymour Island. Craters are so numerous on the islands that Darwin² estimated them to exceed 2,000—they vary from mere spiracles to huge caldrons several miles in circumference. Chatham Island is remarkable for the number of craters found on its eastern end. These are all small, however, varying from 100 to 400 feet in diameter and from 50 to 100 feet high. They are so close together that 50 or more can be seen from the top of almost anyone of them.

The basalt of the islands is brownish-black in color and very coarse in texture (almost amygdaloidal). In the cavities of the coarse basalt, some nice olivine may be found.

Some specimens of a cream-colored coral limestone whose entire surfaces were coated by red hematite stains, were picked up on Seymour Island. The fossil corals which are very thin and lamellar, have altered into pure white kaolin. The limestone, which phosphoresces white under the cold quartz light, takes a nice polish.

A few small boulders and large pebbles of reddish sandstone were also picked up on Seymour Island. These specimens resemble, in some way, those of northern New Jersey.

The sands of the islands are also of much interest. The olivine sand is fine grained and the olivine varies in color from light green to so black a color that it looks like obsidian. It is associated with shell sand but the dark olivine is so much in excess that the material is actually "black" sand. The shell sand is also fine grained but of many shapes—rounded, elongated, crescent-shaped, etc. Much of the sand is snow-white in color, the rest is stained light to dark brown by iron, in the main the sand has a cream-color; some olivine is also present. Both these sands have been described by Mr. Grahl.

At Chatham Island, Darwin³ noticed

some great blocks of lava, cemented by calcareous matter, containing recent shells; but they occurred at a height of only a few feet above high-water mark.

Small pebbles of brownish quartz porphyry were found on Santa Cruz and Seymour Islands.

Mineralogy

Albite: Darwin¹ describes glassy crystals of albite, varying from 1/10 of an inch up to half-an-inch in recent lava outpourings on Albemarle, Chatham, and James Islands, but none were seen by me.

Garnet: Small reddish grains (almandite?) in a porphyritic brownish quartz were found on Santa Cruz Island. Nice deep red garnets, about 3/8 inches in size, were seen that had come from Seymour Island.

Gold: A gold mine is said to exist on one of the islands but I had no opportunity to investigate. Some private individuals had been prospecting for the precious metal and had actual found it, so I have heard.

Gypsum: Massive, white and reddish on Seymour Island as has already been mentioned. Tiny, colorless, crystalline masses of selenite has been found in the reddish sandstone, also in basalt, and both occurrences on Seymour Island. These selenites phosphoresce white under a cold quartz light.

Halite: On James Island, Darwin⁵ visited a salt lake lying in the bottom of a circular crater about a third of a mile in diameter and 400 feet in depth. The water is only three or four inches deep but at its bottom is a layer of beautifully crystallized white salt (halite), resting on deep black mud. This salt lake is about 1 1/2 miles inland from Puerto Grande.

Hematite: Reddish stains on the cream-colored limestone from Seymour Island.

Kaolin: See limestone.

Labradorite: Small (about 1/4 inch) smoky-gray, glassy crystals with olivine in basalt. From Seymour Island.

Limonite: Brownish incrustations on basalt. Seymour Island.

Olivine: Small, green, glassy masses are common in the basalt on every island. Every basalt contains it—often as rounded grains in cavities. The basalt is so coarse that even tiny grains of olivine can be seen with the naked eye. I have seen olivine as much as 1/2 inch in diameter on both the Santa Cruz Island, Seymour Island, and elsewhere.

Pyrolusite: As black dendrites on brownish quartz pebbles from Seymour Island.

Proxene, var. Augite: Small crystals in tuff were found on Chatham Island by Darwin.⁶

Quartz, var. Chalcedony: A 1 1/2 x 2 inch concave cream-colored pebble of chalcedony was found on Seymour Island. The concave surface is smooth and lustrous; the opposite face is so perforated with tiny holes as to give it a rough surface of a dull gray color. Tiny bluish chalcedony masses in cavities of basalt were also noted on Seymour Island. Whitish masses of chalcedony in a porphyritic quartz pebble, which takes a nice polish, was still another specimen found on Seymour Island.

Quartz, var. Smoky: Tiny masses associated with garnet in a porphyritic brownish quartz. Found on Santa Cruz Island.

References

- 1 and 5. A Naturalist's Voyage Round the World. By Charles Darwin, John Murray, London (1913). pp. 397, 402
- 2, 3, 4, 5 and 6. Geological Observations. By Charles Darwin, D. Appleton & Co., New York and London, 2nd edition. pp. 111, 112, 117, 119, 123, 130

Zircons from Abraki Pahar, India

In the pegmatites of Abraki Pahar, Gaya District, in central Bihar Province of northeastern India, a number of interesting minerals are found. These consist of apatite, beryl, biotite, garnet, microcline, muscovite, pitchblende, tourmaline, and zircon. The zircon occurs in large clusters of dark brown crystals associated with pitchblende. The deposits are worked for mica (muscovite).

DIAMOND HEAD, HAWAIIAN ISLANDS

By JOHN S. ALBANESE

U. S. Marines

Diamond Head, in the Pliocene area of the southeastern part of the island of Oahu, Hawaiian Islands, is a well-formed secondary crater. It is adjacent to Honolulu and is so conspicuously situated that it is familiar to all travelers who have come to this city by sea.

Diamond Head is a fine example of the typical tufa cone with its broad and shallow saucer-shaped crater. It is composed of cinders and tuff, in fact, it is an immense cinder cone. Within it is a large crater, almost a mile across.

The outer flanks of the cone are scored upon all sides with little ravines. The cone is situated close to the sea which washes the foot of its southern slope. Within the cone is a pond, about 200 ft. in diameter, which is dry except after a heavy rainfall. The highest point is about 720 ft. above sea level. Stratification is parallel to the bottom of the saucer. Laminae are separated by calcareous deposits which contain fragments of coral and basalt. The region adjacent is an elevated coral reef. Basalt is the underlying rock that is overlaid with Pliocene limestone.

The order of genesis seems to be:

1—Deposition of the coral reef on an ancient lava.

2—The ejection of the tuff in shallow water, bringing up fragments of the older rock.

3—The Head was covered with vegetation.

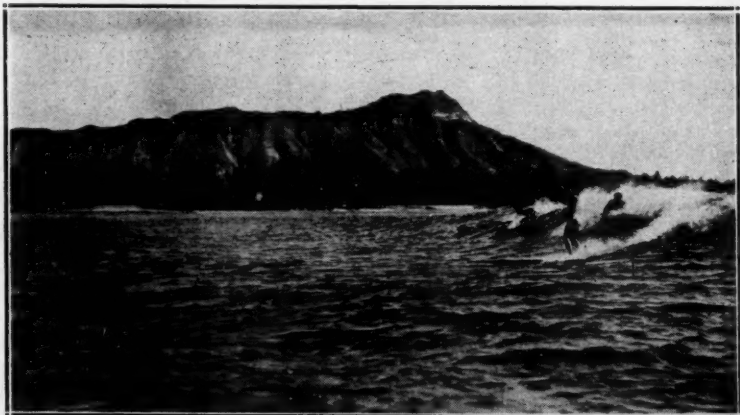
4—Submergence to about 200 feet.

5—Emergence to present level.

According to Dana, Diamond Head may have been thrown up in a single year or less. He refers to some notable recent eruptions which had likewise been formed in a very brief time.

These were Tarawera, in New Zealand where "the eruption was ended and the clouds of dust gone in six hours." Then there was Krakatoa, in 1883, which accomplished its work in 36 hours. And thirdly, Baldaion, in Japan, sent forth steam and dust and possibly lava in 1888, the action being of extreme violence. "In one hour the dust shower had mainly passed, and in five hours it had wholly ceased."

The action of Diamond Head can be compared to the eruption of Monte Nuovo, near Naples, Italy, when a tuff cone was formed in 24 hours.



Diamond Head, near Honolulu, Oahu, Hawaiian Islands

Diamond Head is so called because of the fact that early English sailors found loose calcite crystals on the slopes of this creater and believed them to be diamonds.

At present Diamond Head is a military reservation.

Mineralogy

Only three minerals have been found by the author on Diamond Head and these are described briefly.

Aragonite: Grayish, botryoidal, pearly incrustations, in pockets of tuff; also white crystalline masses coating cavities

in tuff, which is also a dark brownish fine grained rock.

Calcite: Snow-white thin veins in a dark brownish, fine-grained tuff.

Olivine: Small, greenish-brown glassy masses so peppering an amygdaloidal brown basalt as to give the latter a honey-combed appearance.

In addition to the minerals, interesting specimens of calcareous tufa, containing fragments of coral, shells, and basalt, also occur. Great quantities of shells are to be found imbedded in the tuff.

VIRGINIA MINERAL PRODUCTION BREAKS RECORDS

The value of minerals mined and quarried in Virginia during 1943 reached an all-time peak, Dr. Arthur Bevan, State geologist of the Virginia Conservation Commission, stated recently. This announcement is based on the annual canvass of mineral production in the State, made jointly by the U. S. Bureau of Mines and the State Geological Survey.

The production value of these raw mineral resources for last year amounted to approximately \$82,068,000. Certain processed rocks and minerals, used in the manufacture of rock wool, mineral pigments, ground feldspar and aplite, ferro-alloys, and coke had a value of more than \$8,000,000. This sum is not included in the total value because it is in part a duplication of the value of the raw materials used in the manufacture of these mineral commodities.

This large mineral production reflects in part the response of the mineral producers of the State to war demands upon their mines, quarries, and processing plants. This output is more than one-third larger than the production reached in 1920 as a result of World War I. The total value of raw mineral resources produced in that year was slightly more than \$60,000,000. However, the value of processed rocks and minerals used then in the manufacture of mineral commodities amounted to \$25,000,000.

The 1943 production value of more than \$82,000,000 represents a steady increase in the production of mineral resources in the State during the war years. The value in 1940 was \$50,003,679, in 1941 was \$71,340,934, and in 1942 was \$79,770,810. It is anticipated that the production value for 1944 may be even higher than that for last year.

The nonmetallic minerals accounted for most of the production in 1943, as their total value was \$76,484,000. Coal at the mines had a value of more than \$56,000,000. This continues the sharp rise in the value of mined coal from \$30,000,000 in 1940 to \$52,000,000 in 1942.

Other nonmetallic minerals had a production value of more than \$20,000,000. They included mica and quartz crystal used directly in war radio and other -war electrical equipment; aplite, clays, feldspar, and kyanite used in the ceramic industries; cement rock, gravel, gypsum, limestone, talc, sand, slate, soapstone and other stone used in the construction industries; and lime, salt, and a few other resources used in the chemical industries. Much lime and limestone were also used to increase food production by renovating soils.

Mica was, and still is, the most critical war mineral—No. 1 on the strategic

(Continued on Page 21)

JADE MOUNTAIN, ALASKA

Several members of the R. & M.A. have sent clippings to the Editor relative to recent discoveries of jade on Jade Mountain, Alaska. According to the clippings, Maj. Marvin Marston, (of Seattle, Wash.), military aide to Governor Ernest N. Gruening, of Alaska, made a special journey to Jade Mt.—situated in the remote Kobuk country of northwestern Alaska—to investigate the locality about which little was known except to a few old-time prospectors. If jade on the mountain did exist, instead of being a legend, it would prove a "gold mine" to the natives of Alaska as it would furnish them with valuable material for their jewelry craftsmen. Many of the natives are skilled in making jewelry and ornaments out of fossil walrus ivory, which is found in various parts of Alaska, but this material is not too plentiful and it cannot compare with jade for beauty. Jade, apparently, is but little known to the modern natives and thus its locality has been lost to them.

"The jade is there, all right," the major is quoted as saying on his return. "I saw the mountain and saw the float jade in the stream beds and it is of jewelry grade, as fine as any I ever saw. It ranges from black to white, and there are enormous chunks of it—boulders larger than a dozen men could lift."

Jade Mountain, 3,500 feet high, is about 5 miles north of the Kobuk River and about 70 miles east from the coast.

Jade from Alaska was known for some years due to many ornaments, etc., of early inhabitants, being found throughout the country but the locality from which the material came, however, was a mystery.

In 1884 some natives told Lt. J. C. Cantwell, of the U. S. Navy, that the material occurred on a mountain near the Kobuk River, but through superstitious fear of the mountain, refused to guide him to it. Two years later, in 1886, Lt. George M. Stoney,¹ also of the U. S. Navy, induced some natives

to guide him to the mountain but they refused to climb it for fear they might not return alive to their villages as only the medicine man could visit it in safety and then not until after a long fast. Somewheres on the mountain was an old mine that had been worked for many hundreds of years by the natives and this he resolved to find.—and he found it. Due to the remoteness of the region and the sparsely settled country, the discovery of the ancient mine created but little interest and with the passing of years its location again became lost. So Maj. Marston's journey to the locality may stir up a new interest in Alaskan jade.

Mr. O. C. Cole, of Kenyon, Minn., who sent in the first clipping also included this message: "Hope some dealer gets busy and handles this jade. I need four or five specimens for my collection."

Shungnak, the local Eskimo name for jade, is given to one of the tributaries of the Kobuk River.²

¹Stoney, Lt. George M. *Naval explorations in Alaska: An account of two naval expeditions to northern Alaska*. U. S. Naval Institute, Annapolis, Md. 1900, pp. 56-57

²Ball, Sydney H. *The mining of gems and ornamental stones by American Indians*. Smithsonian Institution, Bureau of American Ethnology, Bull. 128, 1941, p. 37

Error in Tieman's Ad!

Editor R & M:

My ad in the December issue of *Rocks and Minerals* had an error. I wrote in the ad on Siberian Emeralds that they were not *Emeraude-Green*. The ad as printed read: "And not *emerald-green*."

Being grass green these emeralds are emerald-green. But they are bright which is neither *light green* nor are they *emerald-green*, which is a *very dark green* color.

Emeraude-green appears more often in tourmalines; true emerald-green seldom appears among tourmalines.

Wm. F. Tieman

2047 Bissell St., Chicago, Ill.

MY EASTERN VACATION

By B. M. BREHM

990 Dana NE, Warren, Ohio

Vacation time and the car all set for a nice trip but the gas situation being as it is, trains and busses and ferries and taxis had to take me where I wanted to go the best they could and they did a nice job of it.

Monroe Mineral Store First Stop

I left Warren, Ohio, June 11, at 4:00 a.m., on the Erie Railroad. My destination was the Monroe Mineral Store at Monroe, N. Y. The train makes no stop at Monroe so went as far as Goshen, N. Y., and took a bus on to Monroe. I arrived at the Mineral Store, operated by Mr. Egbert McElroy, just about dark. He and his wife made me feel at home immediately, gave me a cottage for my stay, and did a marvelous job of feeding me. Monday morning was spent fishing in his private pool and looking over his large nursery and cottages; the afternoon was spent looking over his stock of minerals in general and fluorescent ones in particular, talking stones, and later visiting the Smith boys near Pleasant Valley who had some nice minerals.

Tuesday: Mr. McElroy and I drove to Paterson, N. J., but arrived too early to visit the museum there. Stopped for a few minutes at the New Street quarry but found nothing. Went to the Prospect quarry and found out that visitors were strictly forbidden admittance. On to Franklin, N. J., where we saw some nice private collections of Franklin minerals and one nice fluorescent display. Very little material was picked up on this trip but I considered it a treat to be able to get there at all.

Wednesday was a rainy one and we spent the entire day in Mr. McElroy's stone house, picking out material and talking about them and especially of the cuttable qualities of minerals in general, as that is my great interest—anything that will polish. Packed two large boxes of various material and sent them off. Included in the boxes were: fluorescent specimens, several of western

origin as opal and sepiarian nodules and petrified woods, amethyst, agate, quartz xls, tourmaline xls, azurite, turquoise, amethystine quartz and some minor material that looked good and several specimens of prehnite.

Stop-off at Peekskill, N. Y.

Thursday morning early I took leave of the McElroys. Next stop was to be Peekskill, N. Y. Bus to Harriman, thence a bus to Newburgh, ferry to Beacon, train to Peekskill, taxi to the home and office of Mr. Peter Zodac, editor of *Rocks and Minerals*. Mr. Zodac was busy with some newly unpacked specimens and I took up the whole of the afternoon talking and looking over his miscellaneous collections of minerals; my purchases and gift material to be sent home. Mr. Zodac has my sympathy—it is a real job in publishing a magazine and it's extremely hard work. Too many do not realize the time and thought that goes into our magazine each month. Let us give him a little more praise and more help—he's doing a good job and we all should appreciate it more.

Mr. O. W. Bodelsen, of Mt. Kisco, N.Y., President of the Rocks and Minerals Association, was an afternoon visitor. I rode with him back to Mt. Kisco and spent the evening looking at his very large and beautiful collection.

Bedford, N. Y. Visited

Friday morning Mr. Bodelsen took me to the Bedford quarries. The picking was very slim where they were working and still worse at the quarry where no work had been done for some time—not even any more of the nice rose quartz that the place was noted for.

On To Connecticut

In the afternoon I took my leave going by bus to White Plains, bus to New Haven, Conn., bus to West Cheshire. There I was stranded but a call to my friend, Mr. Frank Wilson, who lives at Pratts Corners near Meridan, Conn.,

saved the day. He sure was surprised to see me. Viewing his collection and noting additions made during the interim of four years was a very nice way to spend the balance of the day.

Saturday I visited the International Silver Company where Mr. Wilson is employed. That was interesting as they are doing all war work now. While at the Wilsons I was privileged to see the finest specimen of blue apatite in existence (so I was told).

Sunday, June 18, was spent just talking and looking and trying to get Frank back into doing some cutting which he seems to have neglected. I hope I have succeeded in getting his interest up to the fever pitch again.

Massachusetts Visited

Monday, off again by train to Springfield, Mass., bus to Northampton, bus to Easthampton. There I first went to see my old acquaintance, Mr. John E. Kitson, 71 Cottage St. As he was busy during the afternoon until 6 p.m., I made my way to the Schortmann Brothers mineral store. Spent about 45 minutes viewing minerals and their splendid fluorescent display; then I went back to Mr. Kitson. All evening we talked and looked over his minerals and his fine collection of dinosaur footprints. He has done a nice job at his hobby and now does his own polishing. He is proud of his accomplishments and has a right to be—in fact we all could be proud of our efforts in this wonderful hobby of minerals.

Tuesday, bus back to Northampton, train to Greenfield, Mass., where a 35-minute layover entitled me to see Mr. C. E. Winslow. This gentleman, who has spent years at his hobby of cutting, showed me his finished gems and they were splendid and I was delighted to see them. He is a real hobbyist—he intends to leave his entire collection to the city.

Vermont Visited

Took train to Putney, Vt. Called Mr. Henry Bentley and he came to the station for me. His home was put open to me and needless to say, I enjoyed my stay there. Mr. Bentley likes cut-

ting and also makes his own mountings. He has built all his own machinery and has done a good job. He has minerals all over the rooms set aside to devote to his hobby. His two cottages that he has built are extremely beautiful in workmanship and ingenuity. The fireplaces are works of art and contain some nice mineral specimens. Mrs. Bentley is very sweet and a good cook—what more could you ask for? We traded stones and compared our cutting, talked technique in cutting and concluded we both were doing the same things in almost the same ways with the same results.

Wednesday, Mr. Bentley took me to Brattleboro. There we visited the Bushnell Museum. That is a private, so-called museum, but if you ever get up that way be sure to stop and see it. The marvels of the ages are crowded in the building and you'll never see all there is because there is too much. It's good for a lot of laughs and you can learn a lot. The afternoon bus took me to Claremont, N. H.

Halls Visited in New Hampshire

The evening was spent at the home of Mr. and Mrs. A. C. Hall. They are collectors in a small way but what they had in their collection was nice to see as they had collected all the specimens themselves. He intends to try his hand at cutting and she intends to try mounting. I hope they succeed and they will as they seem to have what it takes.

Thursday, train to Concord, N. H. Visited around the capital grounds and museum. Bus to Gorham, N. H., when I learned that Mr. P. C. Leggett was out of town.

Maine Also Visited

Friday, bus to Perham's Maine Mineral Store at West Paris, Me. Mr. Perham was feeling bad as a result of having his teeth extracted but too much a gentleman not to see me, in fact, he spent the whole day with me and I believe he was in misery part of the time. It was good to see him again after four years. His choice material and my trade material kept us very busy and I enjoyed every minute. He asked

me to settle in Maine—it would be nice but that will have to wait at least for the duration.

Late afternoon a gentleman gave me a lift as far as South Paris. As I was headed for Norway to spend the night, I found that there were no more busses for that town; but a kind bus driver gave me a free ride there. After getting settled I visited Mr. C. B. Hamilton in Norway, who at present is doing some cutting. After a short visit I took leave to spend the rest of the evening with Mr. and Mrs. Robert Bickford. Mr. Bickford told of his 40 years of cutting; but me with only six years, just listened. That's the best way—let the one who knows do the talking.

Saturday, bus to Lewiston, bus to Brunswick, bus to Freeport, Me. Renewing the acquaintance with Mr. I. S. Skillen was a pleasure I had looked forward to for a long time. He showed me how he does his sawing, polishing, cutting spheres, making penholders and ash trays plus cabochons. His mineral store was full of material and I took all I wanted.

Sunday, June 25, raining. Planned to attend field trip of the Maine Mineralogical and Geological Society but it was called off. Mr. Skillen took me to Auburn to see Mr. M. L. Keith who has plenty of years behind him as a cutter and who also has a nice collection of minerals and cut gems. His micro-mounts of gold specimens were the most interesting I ever have seen. Of course the gold was Maine gold. He donated me a handful of nice cutting material and showed his shop and explained his procedure in faceting and cabochon cutting.

Monday, bus to Portland, Me. First to see Mr. Herbert Haven and taste of his wonderful candy. He being busy for the afternoon, he sent me to see Mr. Willis True. Spent several hours too many looking and listening. I felt I must keep going but not until his generosity overloaded me. Too bad there is such a thing as etiquette or I would have been tempted to stay until I was thrown out.

The remainder of the evening was spent with Mr. Edward H. Leonard. Mr. Leonard is a neighbor of Mr. True so I didn't have to go far. His collection is extensive and well balanced. Some of the specimens are very rare and a delight to see and hear about. Again I find the same generosity that seems to be a trait of collectors. Later in the evening Mr. Haven came to take us to his place. Midnight rolled past but we still looked and talked and I for one can sanely say I really had a marvelous time. Between minerals, candy, and Mrs. Haven's coffee, who can tell which was the finer?

Hurley Visited In Little Falls, N. Y.

Tuesday, train to Boston, train to Albany and change there for Little Falls, N. Y. Found Mr. Donal Hurley was at work, so went to bed for a good rest preparatory to a good visit on the morrow.

Wednesday, Mr. Hurley showed me his very extensive collection of quartz crystals. He has his collection well displayed and that's the first time I ever saw or heard that there were so many varieties of quartz crystals. In the afternoon he drove me to Middleville, N. Y. There I saw where the Herkimer County "diamonds" come from and I had the luck to find a large one. We did not have time to do any digging so just looked the place over. Now I know where to go to do some work in the hobby when I can travel with my own car again. Boy, will that be a treat!

Home Again

Late bus to Utica, bus to Binghamton. Nearly dark.

Thursday, train back to Warren—and home again!

Partial list of material sent back as result of this trip: Rose quartz crystals, sillimanite, cancrinite, franklinite xls, Herkimer County "Diamonds," Franklin fluorescent minerals, beryl, topaz, garnet, tourmalines, smoky-quartz xl with tourmaline inclusions, lepidolite, labradorite, rose quartz, caesium beryl, feldspar, beryllionite, Nevada Virgin

(Continued on page 17)

SOME NEVADA PICKINGS

By AUGUSTUS REEVES

Victoria Mine, Wendover, Utah

A friend of mine told me once,—“If I am drafted, I hope they send me to Madagascar, there's good quartz crystals down there.” It was with somewhat the same feeling that I set out for the Victoria Mine about a year ago. This mine is located at a place shown as Dolly Varden on the map, just across the Utah line west of Salt Lake City, in Elko County, Nevada. One crosses the Salt Flats and part of the Great American Desert. On these salt flats was made the world's speed record on land, about 367 miles per hour. The surface is level as a billiard table and hard as pavement, with the additional advantage of being rough, which gives good traction. So, the world's speed record was run on nearly pure salt, and the driver came all the way from England to do it.

Gypsum Sand Crystals

On the shore of this dry lake I got my first specimens which are unique,—gypsum sand crystals. They are a novelty and very interesting. They really have to be seen to be appreciated.

One gets quite a thrill digging for them in the sand, almost like digging for clams. The crystals themselves are wing-like, some having the appearance of tiny airplanes. They are composed nearly altogether of sand, but, as the mineralogist says,—they are pseudomorphed after gypsum. And a word about the sand: A great many people have the idea that all sand is composed of silica grains, but such is not the case. Here on the shore of Great Salt Lake the sand is oolitic lime and the little particles roll around like little globules of Mercury. When split they show their concretionary form,—see English, *Getting Acquainted with Minerals*, p. 94. These, then, are the grains which make up the Gypsum Sand Crystals and add to their interest.

Victoria Copper Mine

We pass through Wendover, Utah, at the western edge of the Salt Flats,

where the Government has an Air Field and Gunners School, and where a soldier from the green fields of Ohio said to me,—“I didn't think there could be a place like this in the United States,—so barren and desolate.” I told him they were training for North Africa and this was a very good imitation. So, you can grasp the idea that I had some misgivings about the place to which I was going, about thirty-five miles beyond. I was due for a very pleasant surprise, however, because the mine was located on an island in the desert at an elevation of about 7,000 feet. The hills are covered with pinion pines and junipers and the temperature is cool in the summer and not too cold in the winter. The camp has an interesting history dating back to the early eighties. It lay dormant and deserted for many years before the present activity. There are many prospect holes on the hills but they were looking for gold, and finding none, abandoned the place. It took a new generation to discover that it was a copper camp. There are volcanic intrusives penetrating the limestone, so there are possibilities for a great variety of minerals, from garnets to scheelite. Theoretically one should find all the different varieties of copper, and possibly it would be so in time, but they appear at different periods of development, and so far I am still lacking two or three,—cuprite and bornite particularly. I found a couple of pieces of gem chrysocolla which I had polished and they made beautiful stones, but as it is scarcity that gives stones their value, I prize these very highly. Also I found on the surface a piece of native copper as large as your finger, from which I got quite a thrill because no one had seen such a thing before and we have not found as yet another. But that is not all. Here is found jasper, plenty of it, in tints to match any color, some variegated, some banded, but mostly straight red, green, or tan. Sometimes

it merges into a waxy translucent agate. Have had some very attractive stones from this material.

Then I made a new discovery,—plasma. It is a small area where this occurs, and it is picked up in fragments on the surface. It is dense and takes a wonderful polish. The color is a uniform green, almost the shade of dark green window blinds. Sometimes it is found with inclusions of iron, red, and occasionally with veinlets of quartz. These make the choice stones when the pattern is good. It is very much like bloodstone except that it does not have the "blood." I think it is also a distant relative of jade.

Nevada Wonder Stone

I had occasion to make a trip further into Nevada, on Highway 50, through Ely, where garnets of good color are reported, but we had no time to investigate. About forty miles west of this town, right on the highway, at Antelope Pass, we ran into a deposit of Wonder Stone. It has been given this name because it has weather marks or bands and still is composed of quartzite. It is similar to Mexican Onyx or Aragonite in appearance and takes an equally good polish. The markings or bands are of various contrasting colors. Hardness seven. The large pieces have large patterns and are suitable mostly for ink stands, lamp bases, book ends, etc., but most intriguing are the small pieces with small patterns, which make up into nice necklace pendants or even ring stones.

Plume Agate Discovered

I save the most interesting find for the last. It can hardly be called a find, however, because I have not found it yet. A friend brought some in,—beautiful plume agate. I had three pieces polished and it's a knockout. This was last summer and I have been living in anticipation of getting there ever since.

"Hope springs eternal in the human breast,

Man never is but always to be blest."

The locality is sixteen miles away, and what with gas rationing, etc., have

not reached there. Made one attempt in which the truck got off the road and mired down in the sand where we had to leave it. Walked home five or six miles arriving at ten o'clock P.M., footsore and weary. I'll get there yet.

Gem Quality Sphalerite Found In Mexico

Large masses of beautiful golden brown transparent sphalerite occur at the Chivera copper mine, Cananea, in the northwestern part of the State of Sonora, in northwestern Mexico. The mine is located about $2\frac{1}{2}$ miles northwest of Cananea and the ore body consists of chalcopyrite, argentiferous galena, and sphalerite, with less abundant tetrahedrite, mixed with quartz.

The gem sphalerite, which is found now and then in the workings, has been cut and faceted to form beautiful gems.

Griotte Marble of France

One of the most brilliant in color of any marble known is the Griotte, or French Red Marble of France. The name griotte is taken from the bright red griotte cherry of France.

The marble is quarried extensively in the Pyrenees Mountains, one important locality being near Prades, in the Department of Pyrenees-Orientales, of southern France, about 10 miles or so from the Spanish border.

Some of the red marble is spotted with small white dots and it is then called "bird's eye Griotte."

The marble is used chiefly for interior decoration and for table tops, panelling, ornaments, etc.

My Eastern Vacation

(Continued from page 15)

Valley opal, Mexican opal, N. H. amethyst, Maine amethyst, datolite xls, blue apatite xl., agate, wood, prehnite, Va. amethyst and a host of miscellaneous materials, and, as usual, I tried to keep in the cutting material only—but didn't quite succeed.

VICTORY SYMBOL CUT FROM FOSSILIZED ROCK

By LOUIS P. UECK

Benton Harbor, Mich.

The writer recently acquired a new diamond saw from one of *ROCKS and MINERALS* advertisers. Anxious to cut and polish minerals for cabinet display and with no previous cutting experience, he selected a fossilized limestone for his first experiment. The results were so impressive that the writer and wife, Mr. Harvey Franz and wife, all very enthusiastic rock hounds, made a trip to Petoskey in Northern Michigan, where fossilized pebbles may be found on the beach of Lake Michigan.

After a couple of hours collecting, our party had gathered more than enough. After culling the undesired from the good cutting and polishing material, the party called it a trip well spent. Many beautiful cabinet pieces were also found.

The rock, a fossiliferous limestone, takes a good polish, and is better known among collectors as "Petoskey Agate."

Many beautiful and interesting cabinet pieces have been cut and polished from these fossilized pebbles.

The photo shows some of the writer's

work. The "V" (for victory) letter was cut from such a "Petoskey" fossilized pebble. The approximate size is 2½ inches in height. The entire symbol was cut with the diamond saw.



Victory Symbol cut from "Petoskey Agate" by Louis P. Ueck

Mt. Apo, Highest In The Philippines

Mt. Apo, 9,688 ft. high, in the southern part of Mindano Island, is the highest mountain in the Philippine Islands. The second highest is Mt. Pulog, 9,613 ft., in the central part of Luzon Island.

Finest Pyrites Found In Italy

The finest pyrite crystals known occur in the magnetite iron mines of Traversella, in the Chiusella Valley, in N. W. Piedmont Province, of N. W. Italy (about 5 miles from the French border). Beautiful pyritohedron crystals of pyrite, often quite large, occur in the cavities of the magnetite in isolated crystals or in groups.

BIBLIOGRAPHICAL NOTES

Famous American Indians. by G. I. Groves

One of the most fascinating books on American Indians has just been released. The author and publisher, G. I. Groves, is a member of the Rocks and Minerals Association.

The book is a history covering the exciting lives of 255 famous American Indians, including mighty war chiefs, warriors, women, half-breeds, and scouts, from their first contact with white men, in 1535, to and including the leaders of the last organized resistance against the government of the United States.

The book contains 272 pages and 86 illustrations of which 50 are of individual Indians described; it has a nice red cover, appropriate for the redmen. A mighty fine book that should have a wide circulation.

Send for your copy TODAY. Price is \$3.00. For sale by the author G. I. Groves, 6601 N. Oshkosh Ave., Chicago, Ill.

Club and Society Notes

New York Mineralogical Club

American Museum of Natural History. New York, N. Y., Wednesday, October 19, 1944.
The meeting was convened at 8:15 P. M.
Adjourned: 9:40 p.m. Attendance: 64.

The president, Mr. Taylor, opened the first fall meeting with a report of business transacted at the October directors' meeting.

At this meeting Mr. Gilman S. Stanton was again elected representative to the New York Academy of Sciences and a curators' committee was appointed which consisted of Mr. O. Ivan Lee, chairman; Mr. J. C. Boyle, and Mr. W. A. Casperson. Other committees, appointed by the president, were as follows:

Excursions: Mr. Leonard Morgan, chairman; Mr. M. Allen Northup, Miss Evelyn Waite.

Membership: Mr. Walter E. Kuenstler, chairman; Miss Gwynne Richards, Mr. Peter Zodiac.

Education and Publications: Dr. Frederick H. Pough, chairman; Dr. Robert B. Sosman, Mr. John N. Trainer.

Auditing: Mr. Ernest Weidhaas, Mr. E. L. Sampter.

Programs: Dr. Frederick H. Pough, chairman; Mr. Joseph D'Agostino, Dr. Alfred C. Hawkins.

Mr. Stanton called attention to Mr. Manchester's book of collected photographs of minerals, localities, and mineralogists of New York City and vicinity and expressed the hope that members would add to it from time to time. In behalf of Mrs. Grenzign he presented to the club a photograph of the late John A. Grenzign for the book.

In accordance with custom the meeting was then opened for accounts of summer collecting by the members. Mr. E. L. Sampter read a report of collecting by him and Mrs. Sampter in northern New England. Mr. Leonard Morgan exhibited polished carnelians and agates which he had collected from streams near Summit, N. J. The specimens were accompanied by a large scale map with the best localities clearly marked. Mr. Morgan also exhibited a five-inch scalenohedral calcite crystal collected this summer from the Prospect Park quarry in Paterson, N. J. and offered some heulandite crystals from this locality to club members for their collections.

Miss Evelyn Waite exhibited agates found on the beach on the north shore of Long Island and reported white feldspar from Meriden, Conn. Mr. McKnown and Mr. Blatchley also gave reports of summer activities and Dr. O'Connell read a letter from

a student now in the army who wanted a reference book on Mineralogy. Lieutenant Cosminsky presented to the club members a box of corundum sent to him by a member of the armed forces on duty in South Africa. The meeting closed with an account by the president of beryl collecting at Topham, Maine.

Respectfully submitted,

Elizabeth Armstrong, Secretary.

American Museum of Natural History, New York, N. Y., Wednesday, Nov. 15, 1944

The meeting was convened at 8:05 P. M.
Adjourned: 9:45 p.m. Attendance: 36.

The president, Mr. Taylor, opened the meeting by calling the attention of the members to two publications by the New Jersey State Department of Conservation. These were Bulletin 50 of the Geological Series on the Geology of New Jersey and Bulletin 57 on Copper Mines and Mining in New Jersey. The vice-president, Dr. Robert B. Sosman, reviewed the first volume of the new edition of Dana's *System of Mineralogy*, edited by Palache, Berman and Frondel.

Mr. George E. Ashby presented to the club an illustrated work written by him on the inclusions found in mica collected on Manhattan Island from 1900 to 1925. He pointed out that such inclusions are frequently distributed parallel to the percussion figure directions and that their thickness is so limited by the mica that many of the magnetite grains are thin enough to be transparent.

Dr. William Parrish addressed the club on the subject of "Isomorphism and Polymorphism." The term isomorphism is loosely used with reference to any two compounds with the same crystal structure, but is more properly restricted to those pairs whose members form solid solutions with each other. In solid solutions, certain ions of a compound are randomly replaced by other ions which must be of similar size. If the replacement is not random, a superlattice is formed.

In discussing polymorphism, Dr. Parrish pointed out that the open structure of a high temperature form may persist at low temperatures if foreign atoms present in the interstices of the structure prevent its collapse to the closer-packed, lower temperature structure.

The meeting closed with a rising vote of thanks to Dr. Parrish for his very instructive lecture.

Respectfully submitted,

Elizabeth Armstrong, Secretary.

Los Angeles Mineralogical Society

The Los Angeles Mineralogical Society has excellent prospects for a most interesting year, according to reports of the newly elected officers and committee chairmen at their November meeting. Mr. A. G. MacArthur has already lined up a list of speakers for next year which promises a varied and well-rounded program.

The meeting for December was a Christmas party at West Ebell Club on December 16th, to which all rock hounds were cordially invited. A similar party last year was such a success that a "repeat performance" seemed in order.

The speaker of the evening was Dr. Ivan Alexis Lopatin, Professor of Anthropology and Archeology at the University of Southern California, who spoke on *The Lost Continents*. Beginning with a reading from the *Dialogs of Plato*, written in the fifth century, Doctor Lopatin reviewed the research into the mystery of the Lost Atlantis and advanced theories of its advocates regarding its supposed relation to existing continents and their earlier peoples. Doctor Lopatin handled his subject in an unusual manner, first presenting various theories that have been promulgated and then refuting them with facts gained from his own extensive travel and observation.

President Lehman told about a camera that has been invented that can be submerged and sunk to the bottom of the ocean and remarked that possibly through this medium proof may be obtained of the existence of these lost continents. Perhaps in the far depths of the ocean there still remains evidence of a continent which reputedly sank beneath its surface in the year 9600 B. C.

Having in mind the difficulties of the members in making field trips for the purpose of adding to their mineral collection, an invitation has been extended to dealers to bring material to the meetings for sale to members and guests. For the November meeting, Ellsworth Beach furnished specimens of Aurichalcite, Realgar and Orpiment, Goethite, Hematite, Celestite and Jamesonite and several members took advantage of this opportunity to augment their collections.

Through the good offices of Charles Schlager, members enjoyed an interesting display of Beryllium, which included Helvite and other sources, also samples of pure Beryllium and the master alloy of Copper Beryllium. A coil spring made of Beryllium alloy was also displayed. Mr. Schlager plans a mineral display as a regular part of the monthly program.

Mr. Willis brought to the meeting some of his cleverly executed carvings in Talc, which were particularly appropriate, as they represented on one side figures of pre-

historic animals and on the reverse plants and birds.

As the identification of minerals has been a popular activity at the meetings, it will be continued during the coming year. A prize is given to the member identifying the largest number of the minerals submitted for classification.

Howard Paget, Publicity Chairman.

September With The Southwest Mineralogists

Sept. 1—After a short business meeting, the well-known lapidarist, Mr. Albert Hake, explained how he built and works the new vise to his large mud saw. He also had a model to demonstrate how he can automatically lap his square cabochons.

Sept. 15—Our Honorary Member, Mr. Ernest Chapman, spoke on the crystal cavities of the New Jersey zeolite region. With extremely beautiful specimens, maps, and charts his story of the genesis of the zeolite was like a fairy tale. One should read the complete story in bulletin 832, *Crystal cavities of the New Jersey region*, by Waldeemar Schaller, U. S. Geol. Sur. for sale by the Supt. of Documents, Washington, D. C.

Sept. 24—Our field trip for September was to the Astronomical Society Club rooms. Here we were shown the different types of glass and lens work, machinery, etc. It was a beautiful clear evening so we had a good view of the moon and stars through the telescope.

Sept. 22-24—These were study nights under the direction of Mr. Harold Eales. On the 22nd we learned to help determine minerals by specific gravity. The 29th was a review of determining minerals by the different physical tests we have had this summer.

Gladys and Harold Eales, co-chairmen for November.

October With The Southwest Mineralogists

Oct. 6—The business meeting was followed by an interesting talk on emeralds, by Mr. Charles Standridge. This was the second of a series of talks on birthday stones.

Oct. 20—Professor George Wyman, of U. S. C., gave an educational talk and demonstration, with a portable setup, of the flotation process for the recovery of metals.

Oct. 22—An interesting field trip to the U.S.C. laboratory, where Professor George Wyman demonstrated the different methods of treating metals and ores, such as assaying, ball mill, cyanide process, and etc.

Oct. 27—A discussion and explanation of the New Dana's *System of Mineralogy* under the direction of Mr. Harold Eales.

Gladys and Harold Eales, co-chairmen for October. Jeane M. Lippert, Corres. Sec'y

Los Angeles Lapidary Society

The Los Angeles Lapidary Society, which its members modestly claim is the largest and best amateur lapidary group in the world, met Monday, November 6th, at the Park Manor, 2200 West 7th Street, for its monthly meeting. Over 100 members were present. Mr. R. E. Willis, the president, because of a bad cold could not preside, so the first vice-president, Mr. Rosenberg, had charge of the meeting.

Several important amendments to the constitution were adopted without opposition. To Mr. Warren, chairman, goes the credit of ably conducting these changes to adoption.

Mr. H. Loren Mitchell, the program chairman, had charge of the evening program which consisted of a couple of reels of colored film including pictures of our field trip to the home of Mr. Hansen. Another feature was the excellent talk on pitch polishing by Mr. Ralph Dietz, forman in an optical establishment. Mr. Dietz showed some fine polished specimens which demonstrated the excellent work which pitch polishing can accomplish.

Mr. Leland Quick, who was to conduct the Open Forum, was ill and his part of the program was postponed. He was to talk about polishing the softer stones.

One of the outstanding features of our society is the willingness of our members to help any one needing advice or instruction regarding phases of the lapidary art. Mr. Herbert Monlux has given instruction to a group of new members in every step in lapidary procedure. He has a well-equipped shop and his willingness to impart to others his knowledge of the art is highly appreciated. If the demand keeps up for help, he will instruct groups twice a month. This instruction is free.

Chas G. Schweitzer, Editor.

Marquette Geologists Association

An interesting meeting was held on Saturday evening, Dec. 2, 1944, at the club's headquarters in Chicago, Ill., because Mr. Ben Hur Wilson was the speaker and his subject was "Meteorites, Objects of Great Human Interest."

The treasury is some \$45 richer because of the auction and raffle at the last meeting. The raffle, in charge of Mrs. Putnam, assisted by Mrs. Richardson, brought in \$15.75. The principal attraction at the raffle (and the reason it was such a success) was a hand-carved and polished agate necklace sent to us by Sgt. Steve Gulon from India; this prize was won by Miss Jenner. Other winners at the raffle were Mrs. Richardson, Mrs. Platte, Mr. Scanlon, Mrs. Lambert, Miss Mary Riordan, and Mrs. Sanger.

The Canon City Geology Club

The planning committee of the Canon City Geology Club met at the home of the secretary Nov. 18 and arranged a field trip.

The object of the field trip was to locate a site where aragonite crystals are reported to occur. It is east of the Royal Gorge, not far from the High Bridge. After disposing of business, a goldpan with garnet-bearing sand was produced and many pretty little garnets were salvaged. The sand is rich with small garnets that range in size from mere specks of color to gems as large as the head of a match. In one instance a tablespoonful of sand yielded twenty-nine garnets. They make an attractive specimen in a test tube or a small vial.

Nineteen members answered "Here" at the first September meeting. Two more members have been added since—Messrs. Robert Romans and Earl Rhodes. The second meeting in October took place in the museum where the club was entertained by a guest speaker. Sergeant Bill Moran, formerly of the Smithsonian Institution, and Sergeant Glen Scott, formerly of the Cleveland Museum, have been with us on several recent field trips. Sergeant Scott had the good fortune to find a complete vertebra of a dinosaur on one of the trips.

F. C. Kessler, Secretary.

State Mineral Society of Texas

The State Mineral Society of Texas is starting off the New Year with several new members: Colonel Ralph B. Fairfield of San Antonio, Mrs. G. R. Thompson, teacher, of Lufkin, and Mrs. Kathleen Duncan Kitchell of Terlingua.

This Society has grown by leaps and bounds during the past year and expects to continue to grow even more in the years to come.

Anyone living in Texas and interested in Rocks and Minerals is invited to join. The dues are only \$2.00 per year. Mrs. Viola Block, secretary, 829 W. Jefferson, Dallas, 8, Texas.

Virginia Mineral Production

(Continued from page 11)

list. Coal is the most valuable war mineral resource from Virginia.

The production of metals from Virginia is never large because large bodies of ore are scarce in the Appalachian region. Their total 1943 value in the State was about \$5,584,000. Zinc ore bulked large in this total, due to war demands. Other metals whose mining in the State was stimulated by the war included bauxite (aluminum ore), copper, lead, manganese, and titanium.

... With Our Dealers ...

A. L. Jarvis, of Watsonville, Calif., has an interesting assortment of fine sliced agates (for polishing) from Texas and New Mexico.

A new advertiser this month is the Speedway Gem Co., of Indianapolis, Ind., who specialize in lapidary material.

Crystals-Slabs-Pebbles—all interesting items—are in the stock of A. J. Alessi, of Lombard, Ill.

Another new advertiser this month is W. Dart, of Goldfield, Nev., whose five ads feature gems, Nevada minerals, and Arkansas quartz crystals.

Wanted—man or woman to operate mineral museum. For further particulars see the ad of L. D. VanCleave, of Joplin, Mo., another new advertiser.

Some very choice specimens of petrified dinosaur bones are offered collectors this month by Marvin's Rock Shop, of Durango, Colo. P.S.—Note the change of address of this firm!

Selected Specimens! — by Schortmann's Minerals, of Easthampton, Mass. Select your specimens early but rush the orders is our advice. NEWS RELEASE—the Schortmann's will hold their annual Exhibition and Sale in New York City on March 16th and 17th. Remember these dates!!!

Cpl. Walter H. Printz, of Hanford, Calif., is the lucky possessor of some unusually fine gem-quality Brazilian agate. Many of our readers may remember him as the proprietor of the Yaquina Gem Shop, of Newport, Ore., which he had to give up when called by the Army for active service.

"Streamliners" best by test! So report many cutters to the manufacturer of this famous diamond saw, Wilfred C. Eyles, of Bayfield, Colo.

Hematogelite! We think it is easier to buy the mineral than to pronounce it but—don't wait too long. Rush your orders to H. E. Powell Co., of Little Rock, Ark.

Lapidary Supplies and Preform Cabochons—a huge stock of both—must be carried by Warner & Grieger, of Pasadena, Calif., to take care of the orders from our huge number of readers.

Montana Sapphires and other desirable specimens feature the ad of Ward's Natural Science Est. Inc., of Rochester, N. Y.

A. J. Harstad, of Helena, Mont., reports that his new "Streamlined" service is very popular with collectors. Are you on his list?

Taeniolite, one of America's rarest minerals, is advertised this month by J. L. Davis, of Hot Springs, Ark.

Choice Western minerals are always popular with our readers and J. Gisler & Son, of San Francisco, Calif., have a nice stock of them.

Another new advertiser this month is Hugh A. Ford, of Cambridge, Mass., who will surely intrigue our readers with his first offering of "Fine minerals from an old collection."

Frank Duncan & Daughter, of Terlingua, Texas, offer this month a limited supply of excellent West Texas fluorescent agate.

Some very fine copper and tellurium minerals are featured this month by Hatfield Goudey, of Yerington, Nev.

An exceptional Colorado gold collection will surely intrigue many readers. E. Mitchell Gunnell, of Denver, Colo., has it for sale.

When it comes to diamond saws, lapidary equipment and supplies, the Western Mineral Exchange, of Seattle, Wash., can fill your orders. They have a nice stock of this material always on hand.

A beautiful green fluorite, associated with calcite, and both fluorescing, is an attractive item of the National Mineral Supplies, of Kenmore, Wash.

Siberian emeralds and Arizona gem garnets are two choice items in the stock of W. F. Tieman, of Chicago, Ill.

Superfine calcite from North Texas, and extra fine galena from the Joplin, Mo., district, are specials of the Ozark Biological Laboratories of Hot Springs National Park, Ark.

Another selection of fine Colorado minerals are advertised this month by Robert Roots, of Denver, Colo.

LS

ole
ral

ts
ry
sis

n-
L.

p-
n,
ck

gh
ill
st
al-

a,
of

n-
ld

on
E.
it

ty
al
ur
is

th
ve
of

r-
of

nd
s-
al
k.

n-
rt